KEYLINA, Kh.V.

Climacteric hemorrhages. Zdrav.Bel. no.3:15-16 '62.

(MIRA 15:5)

1. Iz Baranovichskogo gorodskogo rodil'nogo doma (glavnyy vrach -
zasluzhennyy vrach BSSR V.P. Shchegoleva).
(HEMORRHAGE, UTERINE)   (CLIMACTERIC)

KEYLINA, R. Ya.

"Biochemical Processes in the Brain in Direct Irradiation by X-rays,"
N. N. Blokhin, B. M. Grayevskaya, and R. Ya. Keylina (Cent. Roentgenol.
Radiol. Cancer Inst., Leningrad.) Byull. Eksptl. Biol. Med., 23, 333-42 (1947)

X-ray irradiation of dog brain, at 160 kv., at 23 mm. distance by using
0.5 Cu-3.0 Al filter, each dog receiving a total of 5 unit skin doses of
irradiation in 4 exposures with alternate irradiation of the right and the left
temple area, was investigated in respect to biodhem. effects by detn.
of blood sugar (femoral artery and sinus venosus cerebri), spinal fluid sugar,
blood serum protein, and the albumin-globulin fractions of the latter. As the
total irradiation increased, the total serum portein rose until on the 90th
day (after the 1st irradiation) it rer hed 200% of the initial value. In the
same period the albumin fractions rose by only 26 % of arterial and 32% of venous
blood, while the globulin fraction rose 324 and 323%, resp. The abs. amt. of
protein in the spinal fluid remained within exptl. variations, but its albumin/
globulin ration gradually changed to 1.0 from 0.56 . Arterial blood sugar
remained normal, but it fell in the venous blood, until the sugar utilization by t
the brain at the 90-day period was 370% of initial.

Keylina, R. Ya

BLOKHIN, N.N.; GRAYEVSKAYA, B.M.; KEYLINA, R.Ya.

Biochemical functional test in certain forms of hypertension.
Vop.med.khim. 3:52-57 '51.   (MIRA 11:4)

1. Otdel biokhimii TSentral'nogo rentgenologicheskogo, radiologichesko-
go i rakovogo instituta, Leningrad.
            (HYPERTENSION)

KSILIIA, R. Ya.

USSR/Medicine - Radiation Effects   Nov/Dec 53

"Effects of Aneurin (Vitamin B_1) on the Glycogen Formation Function of Liver of Rats During General Exposure to Various Doses of X-Rays," B. M. Grayevskaya, R. Ya. Keylina, and S. E. Manoylov, Dept of Biochem, Central Roentgenologic and Cancer Inst, Min of Health USSR

Vest Rentgen i Radiol, No 6, pp 22-25

Expts conducted on 15 rats showed that the glycogen formation function of the liver may be partially restored if vitamin B_1 is given after rats have

275T31

been exposed to X-rays. Enough evidence was collected to justify the assumption that the quality of biochem changes in the organism of rats depends upon the extent of exposure to X-rays: small doses (500 r) of X-rays suppress the oxidation systems of the whole organism: larger doses (1,000 and 2,000 r) also cause breakdown of the substances that oxidize. It is possible that interference with the synthesis of the dehydrogenase coenzyme takes place and that vitamin B_1 loses its capacity to combine with phosphoric acid. This follows from a reduction of the restorative effect of vitamin B_1 on the liver.

KEYLINA, R. Ya.

Alterations in carbohydrate metabolism after irradiation of total animal organism. H. M.
R. Ya. Keilina. *Trudy Konferentsii i Radiol.* 1955.
21-6 —Total-animal (dogs) irradiation caused disturbed liver function and disturbed responses to adrenalin and glucose. At sublethal (300-500 r.) and lethal doses the glycemic curves after treatment with adrenalin and glucose are different: in the 1st instance they show slopes with a hyperglycemic and 1 1-1.2, while in the 2nd instance they have the diabetic character (coeff. about 1). After such irradiation there is at first a considerable disorder of sugar utilization by the brain, while in later stages there occurs an actual elimination of sugar by the brain as shown by the outflowing blood, which is never observed in normal animals. At the low-dose level the animals combat the injury and are restored in some 4 days; at high levels of irradiation the process is irreversible and the glycogen-forming function of the liver is impaired for life. —G. M. Bogdanoff.
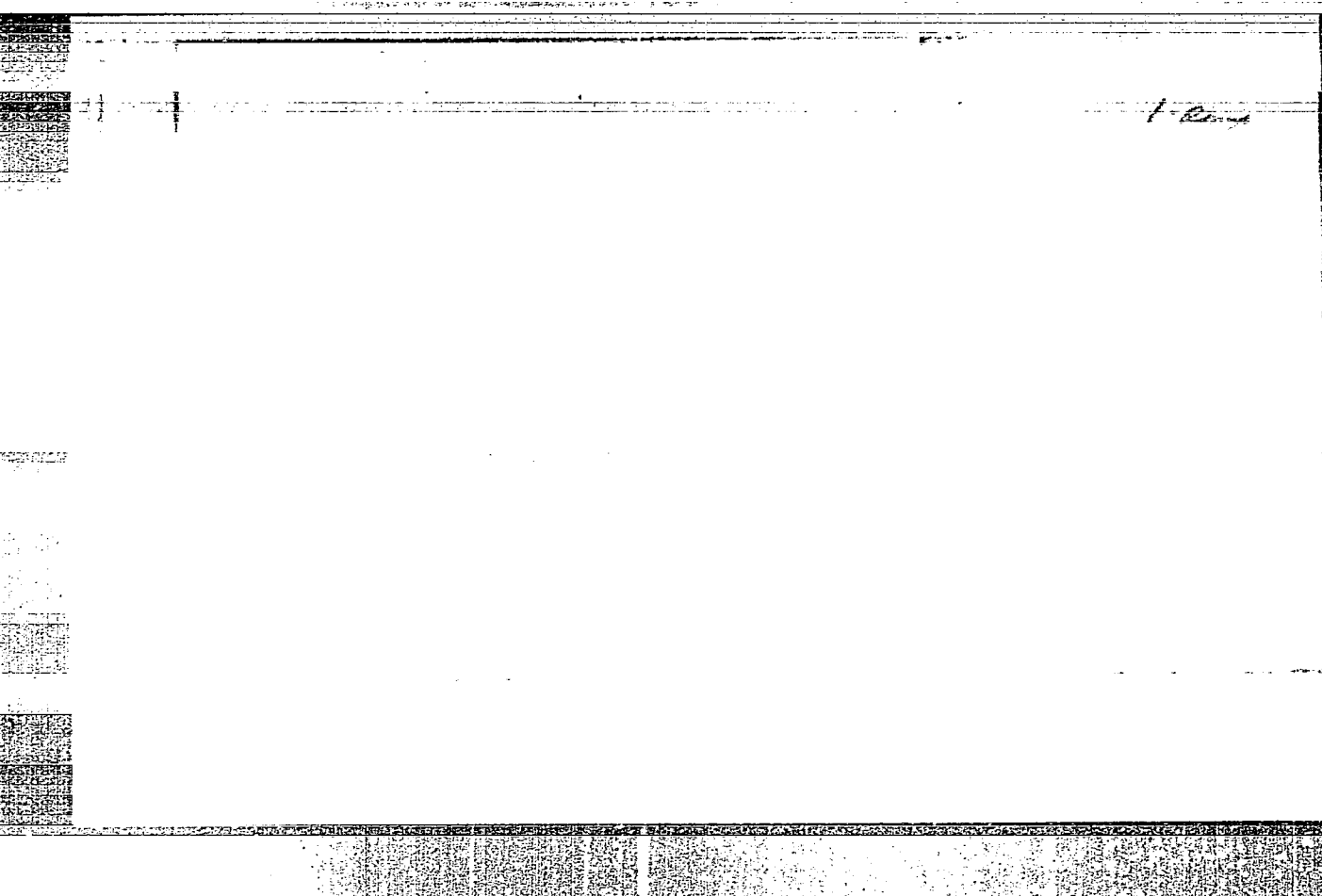
/T\

KEYLINA, R.Ya.

√Action of ionizing radiation on certain phases of carbo- MD (2)
hydrate exchange in animal organism. B. M. Graevskaya
and R. Ya. Keilina. *Uspekhi Sovremennot Biol.* 40, 30-8
(1955).--A review with 67 references.   J. A. Stekol

KEYLINA, R. YA.

"Changes of the Sugar Content of Blood Leaving the Brain and Muscles After Total Irradiation of Dogs by X Rays," by R. Ya. Keylina, Vopr. Radiobiologii (Problems of Radiobiology), Leningrad, 1956, pp 347 - 351 (from Referativnyy Zhurnal -- Khimiya, Biologicheskaya Khimiya, No 1, 10 Jan 57, Abstract No 702

After irradiation of dogs by X rays (300 - 500 r), the sugar consumption of the brain sharply decreased, reaching zero toward the 40th day, but starting with the 50th day there was an insignificant release of sugar into the circulating blood. However, the muscles at this time started to use up sugar intensely.

Following total irradiation of dogs by lethal doses (1,000 r), a high sugar content was maintained for 4 hours in the arterial blood subsequent to adrenalin injections.

Shifts detected in the carbohydrate metabolism following X-ray irradiation are evidences of disturbances of a number of enzyme systems participating in the breakdown and oxidation of glucose.

Sum. 13 05

"Change of Carbohydrate Metabolism Due to Total Irradiation
of an Animal Organism by X Rays," by B. M. Grayevskaya and
R. Ya. Keymina, Voprosy Radiobiologii (Problems of Radio-
biology), Leningrad, 1956, pp 352-356 (from Referativnyy
Zhurnal -- Khimiya, Biologicheskaya Khimiya, No 24, 25 Dec
56, p 80, Abstract No 23449)

Subcutaneous injections of adrenalin to dogs who were subjected to
total irradiations by 300 to 500 r did not cause increased blood glucose
content. Liver glycogen content decreased 80% in 48 hours after irradi-
ation.

Glucose administration caused no glycogen synthesis in the liver of
rats who had been subjected to 500, 1,000, or 2,000 r.

KEYLINH, R. Ya.

TATARSKIY, N.E.; KEYLINA, R.Ya., kand.biol.nauk, nauchnyy red.; VLADIMIRSKIY, D.M., ted.izd-va; GURDZHIYEVA, A.M., tekhn.red.

[Tagged atoms and their role in the understanding of vital phenomena]
Metod mechenykh atomov i ego rol' v poznanii zhiznennykh iavlenii.
Leningrad, 1957. 52 p.   (MIRA 11:5)
         (Radioactive tracers)

USSR / Human and Animal Physiology. Effect of Physical Factors.   T-13

Abs Jour   : Ref Zhur - Biologiya, No 1, 1959, No. 3968

Author   : Grayevskaya, B. M.; Keylira, R. Ya.
Inst   : Not given
Title   : The Decrease of Sensitivity of Animals to the Effect
              of Roentgen Rays in a Lethal Dose by Their Preliminary
              Irradiation with Non-Lethal Doses

Orig Pub   : Tr. Vses. konferentsii po med. radiol. Eksperim. med.
              radiol. M., Medgiz, 1957, 183-185

Also pub. in *Biofizika* *1, No. 3 232-236, 1956*

Abstract   : The survival of animals subjected to a total irradiation
              of 1000 r (lethal dose) constituted respectively 50 and
              100% 150 days (34 rats) and 120 - 150 days (8 dogs)
              after preliminary irradiation with a dose of 500 r.
              Repeated action, as differentiated from a single action
              in the same dose, was accompanied by a less severe symp-
              tomatology and did not lead to a decrease of Hb content

Card 1/2   *Cent. Sci Res. Roentgens. Radiology Inst.*

            127 *Min Health SSSR, Leningrad*

MANOYLOV, S.Ye.; GRAYEVSKAYA, B.M.; KEYLINA, R.Ya.

Use of some biological preparations (campolonum, vitamin B_1 and adenosinetriphosphoric acid) as prophylactic and therapeutic drugs in radiation sickness. Vop.radiobiol. 2:426-430 '57.

(MIRA 12:6)

1. Sotrudniki ﾉSentral'nogo nauchno-issledovatel'skogo rentgeno-radiologicheskogo instituta Ministerstva zdravookhraneniya SSSR.
(VITAMINS--B) (RADIATION SICKNESS) (ADENOSINETRIPHOSPHORIC ACID)

KEYLINA, R.Ya.

State of carbohydrate metabolism during the use of certain
substances in the prophylaxis of radiation sickness (insulin,
adrenalin, vitamin B, adenosinetriphosphoric acid, etc.).
Vop.radiobiol. 2:437-444 '57.   (MIRA 12:6)

1. Sotrudnik TSentral'nogo nauchno-issledovatel'skogo rentgeno-
radiologicheskogo instituta Kinisterstva zdravookhraneniya SSSR.
        (RADIATION PROTECTION) (CARBOHYDRATE METABOLISM)

GRAYEVSKAYA, B.M., KEYLINA R.YA.

With regard to I.G. Krasnykh and S.P. IArmonenko's letter published
in "Biofizika". Biofizika 3 no.4:527-528 '58   (MIRA 11:8)
          (X RAYS--PHYSIOLOGICAL EFFECT)

KEYLINA, R.Ya.; KOMAROV, Ye.I.

Reflex mechanisms of changes in blood sugar level associated with·
local irradiation of the small intestine by radioactive strontium
[with summary in English]. Fiziol.zhur. 44 no.2:148-152 F '58.

(MIRA 11:5)

1. TSentral'nyy nauchno-issledovatel'skiy rentgeno-radiologicheskiy
institut, Leningrad.
         (INTESTINES, SMALL, eff. of radiations on
            radiostrontium irradiation of exteriorized small intestine
            in dog, eff. on blood sugar levels, reflex mechanisms (Rus)
         (STRONTIUM, radioactive
            irradiation of exteriorized small intestine of dog, eff. on
            blood sugar levels, reflex mechanisms (Rus)
         (BLOOD SUGAR, physiol.
            eff. of radiostrontium irradiation of exteriorized small
            intestine of dog, reflex mechanisms (Rus)

GRAYEVSKAYA, B.M.; KEYLINA, R.Ya.

Role of the adrenals in certain metabolic disorders in irradiated organisms. Med. rad. 4 no.3:21-25 Mr '59.   (MIRA 12:7)

1. Iz otdela biokhimii (zav. - prof. S.Ye. Manoylov) TSentral'nogo nauchno-issledovatel'skogo rentgeno-radiologicheskogo instituta Ministerstva zdravookhraneniya SSSR.
    (ROENTGEN RAYS, effects,
        on carbohydrate & protein metab., eff. of adrenalectomy
        (Rus))
    (CARBOHYDRATE, metab.
        eff. of x-rays in adrenalectomized animals (Rus))
    (PROTEIN, metab.
        same)
    (ADRENALECTOMY, effects,
        on carbohydrate & protein metab. responses to x-rays
        (Rus))

KRYLINA, R.Ya.

Effect of whole body X-irradiation on the glycogen content of
the rat liver. Biokhimiia 24 no.6:966-999 N-D '59.

(MIRA 13:5)

1. Department of Biochemistry, Central Research Institute of
Medical Radiology, Leningrad.
(LIVER radiation eff.)
(GLYCOGEN metab.)

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69

PHASE I BOOK EXPLOITATION   SOV/5435

Kiselev, P. N., Professor, G. A. Gusterin, and A. I. Strashinin, Eds.

Voprosy radiobiologii. t. III: Sbornik trudov, posvyashchennyy 60-letiyu so
   dnya rozhdeniya Professora M. N. Pobedinskogo (Problems in Radiation Biology.
   v. 3: A Collection of Works Dedicated to the Sixtieth Birthday of Professor
   M[ikhail] N[ikolayevich] Pobedinskiy [Doctor of Medicine]) Leningrad.
   Tsentr. n-issl. in-t med. radiologii M-va zdravookhrananiya SSSR, 1960.
   422 p. 1,500 copies printed.

Tech. Ed.: P. S. Peleshuk.

PURPOSE: This collection of articles is intended for radiobiologists.

COVERAGE: The book contains 49 articles dealing with pathogenesis, prophylaxis,
   and therapy of radiation diseases. Individual articles describe investigations
   of the biological effects of radiation carried out by workers of the Central
   Scientific Research Institute for Medical Radiology of the Ministry of Public
   Health, USSR. [Tsentral'nyy nauchno-issledovatel'skiy institut meditsinskoy
   radiologii Ministerstva zdravookhraneniya SSSR] during 1958-59. The following

Card 1/10

$= 69$

Problems in Radiation Biology (Cont.)   SOV/5435

topics are covered: various aspects of primary effects of radiation; the course of some metabolic processes in animals subjected to ionizing radiation; reactions in irradiated organisms; morphologic changes in radiation disease; and reparation and regeneration of tissues injured by irradiation. Some articles give attention to the effectiveness of experimental medical treatments. No personalities are mentioned. References accompany almost all of the articles.

TABLE OF CONTENTS:

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6

Problems in Radiation Biology (Cont.)   SOV/5435

Manoylov, S. Ye., and B. A. Orlov. Use of the Spectroscopic Research
Method in the Study of the Condition of Iron-Containing Compounds in
Animal Organisms Irradiated With X-Rays   152

Demin, N. N., [Professor]. On Some Metabolic Disturbances in Lipides
Due to External Whole-Body Ionizing Irradiation   158

Keylina, R. Ya. Concerning the Problem of the Condition of Processes of
Synthesis and Decomposition of Carbohydrates in the Animal Organism
Subjected to Whole-Body X-Ray Irradiation   165

Shitova, Z. I. Changes in Respiration of the Skeletal Muscles Following
Irradiation by Radon of Different Segments of the Nervous System 173

Mytareva, L. V. Effect of Ionizing Radiation on a Ferment of Glycolysis
of Phosphohexoisomerase in Some Organs and Tissues of an Animal Organism
Subjected to Whole-Body Irradiation   183

Card 5/10

KEYLIS-BOROK, V. I.

PA 233T84

USSR/Geophysics - Earthquakes   1950

"Determining the Dynamic Parameters of the Focus,"
V.I. Keylis-Borok

"Trudy Geofiz Inst" No 9 (136), pp 3-19

Considers a method of detg the source of an earth-
quake, approximately equiv to a focus, that is, at-
tempts to develop a simpler approx method for select-
ing the type of source corresponding to the focus be-
ing studied.

233T84

KEYLIS-BOROK, V. I.

PA 233T85

USSR/Geophysics - Earthquakes   1950

"Investigating Sources Equivalent to the Foci of
Earthquakes," V. I. Keylis-Borok

"Trudy Geofiz Inst" No 9 (136), pp 20-42

Considers the relations between (a) certain pe-
culiarities of the focus and (b) the functions
which define the source approximately equiv to
it. Studies the dipole with a moment as a source,
which corresponds to a tectonic focus.

233T85

USSR/Geophysics - Seismism   21 Feb 50
                          (Earthquakes)

"Dynamic Characteristics of a Centrum According
to Seismic Observations," V. I. Keylis-Borok,
Geophys Inst, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol XX, No 6, pp 995-998

Applies several works of Acad V. I. Smirnov and
S. L. Sobolev's school on theory of elasticity
to interpretation of seismic data. Study of
centra by method proposed would require seven
or eight seismic stations located not further
than 150-180 km from the centrum. Submitted
19 Dec 49 by Acad O. Yu. Shmidt.

                                      165T26

KEYLIS-BOROK, V. I.

USSR/Geophysics - Seismology   Mar/Apr 51

"Superficial Waves in a Layer Lying on Elastic
Half Space," V. I. Keylis-Borok, Geophys Inst,
Acad Sci USSR

"Iz Ak Nauk, Ser Geog i Geofiz" No 2, PP 17-39

Discusses some properties of superficial oscilla-
tions generated by sinusoidal concd force on free
boundary of parallel plane layer lying on elastic
half space. Computes dispersion and frequency
characteristics of layer corr to av terrestrial

USSR/Geophysics - Seismology (Contd)   Mar/Apr 51

crust. Analyzes some explt data on seismic waves; in
particular, the nature of Rayleigh and pseudo-
Rayleigh seismic waves. Submitted by I. S. Leybenzon
(deceased).

180T63

KEYLIS-BOROK, V. I.

USSR/Geophysics - Earthquake Centers   Nov/Dec 51

"Graphic Methods for Calculating the Dynamic Para-
meters of Earthquake Seats," V. I. Keylis-Borok

"Iz Ak Nauk SSSR, Ser Geofiz" No 6, pp 11-27

Considers graphic methods for detg the parameters
of a source approximately equiv to the site (focus)
of an earthquake. Gives extensive formulas, graph,
and tables for subject detn.

199T72

KEYLIS-BOROK, V. I.

USSR/Geophysics - Epicenter Azimuth   1952

"Problem of Determining the Azimuth to the Epicenter," V. I. Keylis-Borok, S. D. Kogan

"Trudy Geofiz Inst, Ak Nauk SSSR" No 14 (141), pp 21-28

Describes a method of detg the azimuth to the epicenter according to observations of transverse waves.

230T65

ΛЬYLΙϚ - ᏰᏅᎡᏅᏦ, Ꮴ. Ꮷ.

Kellis-Borok, V. I. On the frequency equation of a multi-layered elastic medium. Doklady Akad. Nauk SSSR (N.S.) 87, 25-28 (1952). (Russian)

L'auteur considère un espace élastique composé de n couches planes, parallèles, homogènes, et isotrope+un demi-espace homogène et isotrope, les épaisseurs et autres caractéristiques de couches étant quelconques. Ce système est soumis à des tensions produisant des déformations, les unes et les autres étant fonctions continues des coordonnées. Sur la frontière du système les tensions normales sont nulles. En représentant les solutions des équations des ondes par les intégrales Fourier-Bessel dans le cas de symétrie axiale l'auteur forme l'équation caractéristique dont les solutions donnent les fréquencies des ondes. Il montre que les ondes libres sont possibles et que, à une distance suffisamment grande de la source, on peut avoir des ondes forcées d'un type spécial; leur vitesse de phase et l'intensité dépendent de la fréquence et de l'épaisseur des couches. La note donne les formules assez compliquées sans définitions et sans démonstrations.   V. A. Kostitzin (Paris).

KEYLIS-BOROK, V. I.

"Problems of Propagation of Stationary Oscillations in a Layer Located Between Two Semispaces," Tr. Geofiz. in-ta AN SSSR, No 20, 1953, pp 20-36

Dispersion and resonance of stationary axially symmetrical, interfering oscillations generated by a centered force in a flat parallel layer rigidly bound to semispaces is analyzed. These oscillations correspond to roots of frequency equations. The dependence of the amplitude of these waves on thickness of layer, wave length, and distance from the layer is computed in a few examples.

RZh Fiz. No 3, 1955

KEYLIS-BOROK, V.I.

KHARIN, D.A.; KEYLIS-BOROK, V.I.; KOGAN, S.D.

Methods of seismic observations in an epicentral zone and their
interpretations. Trudy Geofiz.inst. no.21:27-48 '53. (MLRA 7:5)
        (Seismology--Observations)

reports given at the 10th General Assembly of the International Union of Geodesy and
Geophysics, Rome, 1954

Evaluation, B-86198 and 86204, 30 Jun 55

KEYLIS-BOROK, V.I.; KOGAN, S.D.

KEYLIS-BOROK, V.I.

Resonant properties of interference waves in a layer. Trudy Geofiz.
Inst. no.22:50-58 '54.
            (Waves) (Seismology)   (MIRA 8:4)

KEYLIS-BOROK, V.I.; VVEDENSKAYA, A.V.

Investigation of focal stresses of the Khait epicentral zone.
Trudy Geof.inst.   no.25:113-123 '54.   (MLRA 7:12)
        (Khait--Seismology)

KEILIS-BOROK, V.I.

Propagation of waves in multilayer semi-spaces. Dokl.AN SSSR 95
no.4:733-735 Ap '54.
(NLRA 7:3)
(Vibration) (Seismometry)

KAYLIS-BOROK, V.I.

"Methodology and Results of Researches on Mechanisms on Earthquakes."

SO: Soviet Academy of Science Proceedings, No.6, March Issue 1955; A-40687

KEYLIS-BOROK B.I., prof. and KOGAN, S.D., Candidate of Physicomathe-
matical Sciences

"Investigation of the mechanism of earthquakes", a paper given at the
50th Anniversary Session of the Seismic Station "Pulkovo", 25-29 Sep
1956, Leningrad.

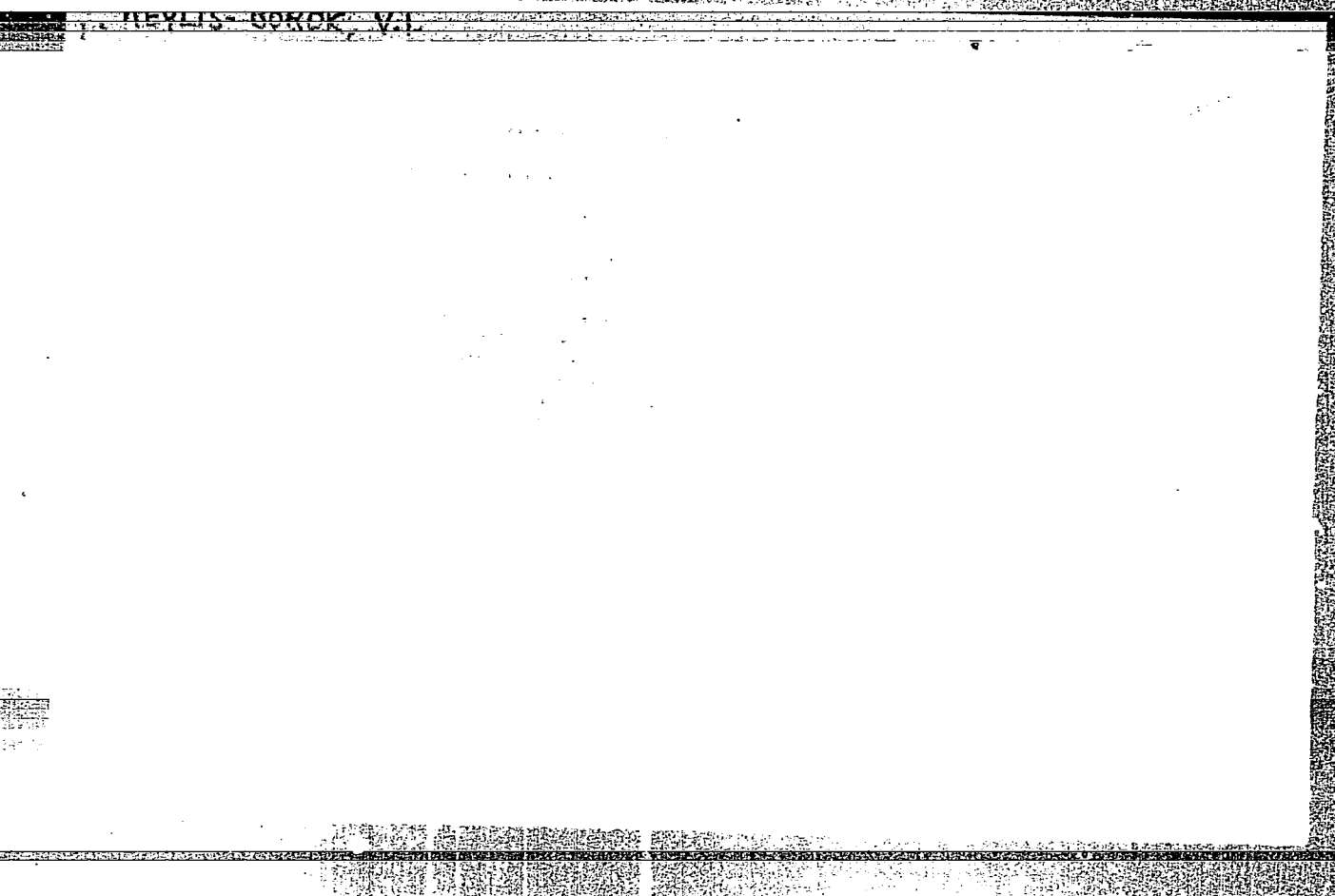SUM. I322

KEYLIS-BOROK, V.I.

Relation of point and area sources. Izv.AN SSSR.Ser.geofiz. no.4:
404-409 Ap '56.   (MLRA 9:8)

1. Akademiya nauk SSSR, Geofizicheskiy institut.
                    (Seismology)

KEYLIS-BOROK, V. I.

BALAKINA, L. M.

X(10)

PHASE I BOOK EXPLOITATION   SOV/1663

Akademiya nauk SSSR. Komitet po geodezii i geofizike.

Tezisy dokladov na XI General'noy assembleye Mezhdunarodnogo geodezicheskogo i geofizicheskogo soyuza. Mezhdunarodnaya assotsiatsiya seysmologii i fiziki nedr zemli (Abstracts of Reports Submitted to the XI General Assembly of the International Union of Geodesy and Geophysics. The International Association of Seismology and Physics of the Earth's Interior) Moscow, 1957. 108 p. /Parallel texts in Russian and English/ 1,500 copies printed.

No additional contributors mentioned

PURPOSE: This booklet is intended for geophysicists, especially those specializing in seismology.

COVERAGE: This collection of articles deals with the structure and composition of the Earth and phenomena related thereto. The majority of the articles concern studies of earthquakes and seismic waves. Other articles cover the structure of the Earth's crust and mountain roots; the elastic properties of rocks at high pressures; the piezoelectric effect of rocks and the method of modelling in tectonophysics. The collection also contains articles on the Earth's thermal history, the microseismic method of tracing storms and others.

Volarovich, M.P. and E.I. Parkhomenko. Piezoelectric Effect of Rocks   29

Veytsman, P.S., I. P. Kosminskaya, and Yu. V. Riznichenko. New Evidence on the Structure of the Earth's Crust and Mountain Roots in Central Asia From Seismic Depth Sounding Data   31

Gzovskiy, M.V. Method of Modelling in Tectonophysics   37

Gorshkov, G.P. Seismic Intensity Regions of Asia   49

Davydov, B.I. Physical Properties of Solid Bodies at High Pressures   43

Keylis-Borok, V.I. Investigation of Earthquake Mechanism   46

Keylis-Borok, V.I. Dynamic Methods of Investigating the Earth's Crust and Internal Structure (Theory, Electronic Computations and Practical Tests)   51

Karus, Ye.V. Absorption of Elastic Waves in Rocks   55

Card 3/5

KEYLIS - BOROK V. I.

GOTSADZE, O.D.; KIRILLOVA, I.V.; KOGAN, S.D.; KUKHTIKOVA, T.I.;
    MALINOVSKAYA, L.N.; SORSKIY, A.A.; KEYLIS-BOROK, V.I.,
    doktor fiziko-matematicheskikh nauk, otvetstvennyy redaktor;
    ZAYTSEV, L.P., redaktor izdatel'stva; EZ, V.V., redaktor
    izdatel'stva; SHEVCHENKO, G.N., tekhnicheskiy redaktor.

[Investigation of the mechanism of earthquakes] Issledovanie
mekhanizma zemletriasenii. Moskva, Izd-vo Akademii nauk SSSR,
1957. 148 p. (Akademiia nauk SSSR. Geofizicheskii institut.
Trudy, no.40).   (MIRA 10:10)
                    (Seismology)

KEYLIS-BOROK, V. I., REZNICHENKO, Yu. V., BELOUSOV, V. V. MAGNITSKIY, V. A., and LYUBIMOVA, Ye. A.,

"Seismological Problems and Questions Concerning the Physical Structure of the Earth's Deposits."

paper presented at the XIth General Assembly of the Int'l. Union of Geodesy and Geophysics, Toronto, Canada, 3-14 Sept. 1957, (Izv. Ak Nauk SSSR - Ser. Geog. 1958, No. 2, pp 3-8 [USSR]).

KEYLIS-BOROK, V. I.

"On a Method He Developed for Determining the Elements of the Occurrence of Recent Faults Found in the Depths and Causing Earthquakes, and an Explanation of the Direction of the Displacement of their Walls," paper presented at the First All-Union Conference on Tectonpphysics, Moscow, 29 January through 5 February 1957.

Institute of Physics of the Earth, Academy of Sciences USSR

Sum 1563

KEYLIS-BOROK, V.I.; MALINOVSKAYA, L.N.

Dislocations in the foci of weak earthquakes in northern Tien Shan.
Biul. Sov. po seism. no.3:118-122 '57.   (MIRA 11:5)
                    (Tien Shan--Earthquakes)

KEYLIS-BOROK, V. I.

AUTHOR: Keylis-Borok, V. I.   49-4-3/23

TITLE: On the theory of waves generated during shear.
           (O teorii voln, voznikayushchikh pri sdvige).

PERIODICAL: Izvestiya Akademii Nauk, Seriya Geofizicheskaya,
             1957, No.4, pp. 440-448 (USSR)

ABSTRACT: The relation is investigated between a point source of
           elastic waves (a model simulating the focus of an
           earthquake) and the static displacements which occur
           after passage of these waves. An analysis is made of
           the static field, described by means of the dislocation
           theory as formulated by Love for shear dislocations,
           and the possibility of application of this theory to
           simulating such focussion models.   In the case of
           correct analysis, the conclusions derived from the
           dislocation theory are in agreement with generally
           accepted conceptions relating to a shear wave in
           the shape of a dipole with a moment. Vvedenskaya, A.V.
           (Ref.4) attempted to find a shear model by means of the
           Love dislocation theory, considering as a model of the
           elementary shear two perpendicular dipoles with a
           moment as indicated in Fig.2 and not one dipole with a
Card 1/5   moment. The dependence of the intensity of the source

           on the time is thereby so chosen that the main part of the
           dislocations is represented by the Dirac δ-function,
           referred to in this paper as the Nabarro source; the
           displacements described by the Nabarro formula (Ref.5) are
           integrated along a circle which simulates the sliding
           plane in the tremor and it is assumed that the obtained
           expressions describe waves which occur during shear,
           taking into consideration the presence of fault.
           It is shown in this paper that Nabarro did not generalise
           the theory of dislocations for the dynamic case and
           introduced certain assumptions without any proof; extension
           by Vvedenskaya of the respective interpretation led to
           erroneous results, even if it is assumed that the assumptions
           of Nabarro are correct. Application of the theory of
           dislocations in modelling of earthquakes is fundamentally
           based on the assumption that residual deformations are
           absent in the focus; even for this assumption, the results
           obtained from the theory of dislocations are practically
           equal with those obtained in earlier work of the author
           (Refs.1 and 2).   The theory of dislocations in the sense
           expressed by Love describes the state of a continuous
Card 2/5   medium and permits determination of a source with static
           forces with equivalent dislocations, i.e. sources which

KEYLIS-BOROK, V.I.; KOGAN, S.D.

    Investigating the mechanism of earthquakes. Biul. Sov. po seism.
no.6:96-99 '57.   (MIRA 11:3)

    1. Institut fiziki Zemli Akademii nauk SSSR, Moskva.
        (Earthquakes)

SOV/169-59-3-2207

Translation from: Referativnyy zhurnal, Geofizika, 1959, Nr 3, p 21 (USSR)

AUTHORS: Keylis-Borok, V.I., Kogan, S.D.

TITLE: An Investigation of the Earthquake Mechanisms

PERIODICAL: Byull. Soveta po seysmologii AS USSR, 1957, Vol 16, pp 96-99

ABSTRACT: This is a brief survey of the work of Soviet authors on the
            mechanisms of earthquakes. The analysis of the investigation
            results of about 300 earthquakes in the main seismoactive zones
            of the USSR and adjacent regions leads to the following pre-
            liminary conclusions: 1) The predominant properties of dis-
            locations in the earthquake source vary sharply with the transition
            from one tectonic section to another one. There is also no direct
            link of dislocations in individual sources with local tectonic
            surface fractures. 2) In regard to the strike of the basic
            structures, the predominant strike of dislocation is transverse
            for the NW part of the Pacific Ocean, Dagestan, the Akhalkalaks-
            koye highlands, and longitudinal for the Ashkhabadskiy rayon.
Card 1/2   But in the majority of zones (Garmskaya oblast', Tien Shan,

An Investigation of the Earthquake Mechanisms   SOV/169-59-3-2207

Shemakha), two predominat strikes are distinguished, the longitudinal and the transverse strikes. A gradual change of the strike of dislocations in the foci from transverse to longitudinal is to be noticed in the Prikazbekskiy rayon of the Caucasus with increasing distance from the zones of transverse fractures. 3) The horizontal components of the displacements in the foci have great intensity. 4) The vertical components of the motion in the foci of some districts (West-Turkmenistan, Caucasus, Tien Shan) have a peculiarity consisting in a lift of the reverse wing, located on the side of the depression. In general, the results adduced coincide with the neotectonic data for a number of regions, where recently formed surface dislocations differ from the basic, older structures, approximately in the same manner as the dislocations in the earthquake foci described by the authors.

S.D. Kogan

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KEYLIS-BOROK, V. I.

"The relation of the Area of Disruption to the Energy of Seismic Waves."

report presented at a meeting of the European Commission of the International
Association of Seismologists and Earth Physicists, Utrecht, Holland, 8-12 April 1958.
(Izv. Akad. Nauk SSSR, Ser Geofizicheskaya, 1958, No. 11, pp 1418.)

Celfis - Jicoc, V. I.

24(6)   PHASE I BOOK EXPLOITATION   SOV/2250

Akademiya nauk SSSR. Institut fiziki zemli

Nekotoryye voprosy mekhaniki deformiruyemykh sred (Some Problems
    in the Mechanics of Deformable Media). Moscow, Izd-vo AN SSSR,
    1959. 219 p. (Series: Its: Trudy, Nr. 2 /169/) Errata slip
    inserted. 2,000 copies printed.

Ed.: V.A. Magnitskiy, Doctor of Technical Sciences; Ed. of Publish-
    ing House: V.A. Kalinin; Tech. Ed.: Yu. V. Rylina.

PURPOSE: This book is intended for engineers and geophysicists
    concerned with problems of deformations.

COVERAGE: This collection consists of eight articles on the mech-
    anics of deformations in solid plastic media as applied to the
    solution of geophysical and engineering problems. No personal-
    ities are mentioned. References appear at the end of each
    article.

TABLE OF CONTENTS:

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Some Problems (Cont.)   SOV/2250

   Petrachen', K.I. Ogurtsov.

Khaykovich, I.M. Beam Method of Computing the Wave Intensity in
a Relaxing Medium With a Large Relaxation Time   179
   The author refers to various scientists offering the solu-
   tion of nonstationary problems in the theory of elasticity
   leading to the determination of the intensity and the force
   of reflected waves. He introduces a so-called beam method
   for computing the propagation of a wave in nonideal elastic
   media. The following names are mentioned: G.I. Petrashen',
   V.M. Babich, G.O. Gurevich.

Sherman, D.I. Problem of the Stressed Condition of a Semiplane
Without External Load and With Two Sunken Circular Orifices   187
   The article discusses the distribution of stresses caused
   by gravity in media weakened by holes or openings. The
   problem is of interest in analyzing the rock pressure in the
   neighborhood of shaft openings and for the study of seismic
   conditions.

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SOV/49-59-1-4/23

AUTHORS: Keylis-Borok, V. I. and Stesin, I. M.

TITLE: Dispersion of the Rayleigh Waves in a Two-Layer Model
            of the Earth's Crust (Dispersiya releyevskikh voln
            v dvukhsloynoy modeli Zemnoy kory)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya,
            1959, Nr 1, pp 27-31 (USSR)

ABSTRACT: In order to improve the data for the Earth's crust
            calculated by the dispersion method, a two-layer
            dispersion method is proposed. The calculation is based
            on the half-space $z > 0$ covered by two layers:
            $0 > z > -m_1$ and $-m_1 > z > -(m_1 + m_2)$.
            The base and the two layers are composed of a
            homogeneous medium which is also isotropic and ideally
            elastic. The phase velocity v of the Rayleigh waves
            in such a medium can be represented by Eq.(1), where
            m_q - thickness of q-layer,
            a_q, b_q - velocities of longitudinal and transverse
                    waves respectively,
Card 1/4 u_q - a constant (q = 1, 2, 3 denote top, middle layers
                    and base respectively).

Dispersion of the Rayleigh Waves in a Two-Layer Model of the Earth's Crust

The relationship of these values is calculated from the following:

$$\sigma_q = \mu_{q+1}/\mu_q; \quad \alpha_q = \sqrt{1 - v^2/a_q^2}; \quad \beta_q = \sqrt{1 - v^2/b_q^2}; \quad \gamma = 2 - v^2/b_q^2;$$

$$s = 2(\sigma_1 - 1) + v^2/b_1^2, \quad c = 2(\sigma_1 - 1) - \sigma_1 v^2/b_1^2; \quad d = c + v^2/b_1^2;$$

$$X_{i_\alpha} = \text{ch } \alpha_i \xi m_i; \quad Y_{i_\alpha} = \text{sh } \alpha_i \xi m_i; \quad X_{i_\beta} = \text{ch } \beta_i \xi m_i; \quad Y_{i_\beta} = \text{ch } \beta_i \xi m_i.$$

(ξ – wave characteristic, $\xi = p/v$, p – rotational frequency). The dispersion surface is equal to $v/b_3 = f(\lambda/m_1, \lambda/m_2)$, where $\lambda = 2\pi(b_3/p)$ – the length of the transverse wave with frequency p. It is divided into successive parts according to the different harmonics (Refs 2,4,5). For computation on hand machines it is better to find the solution of ξm_1 with given

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Dispersion of the Raleigh Waves in a Two-Layer Model of the Earth's Crust

v/b_3 and m_2. The results obtained by means of the electronic machine BESM, Ac.Sc., USSR are shown in Figs. 1-4. The constants used were those for the Central Asia (Refs 6,7) $a_3/b_3 = 1.85$, $a_2/b_3 = 1.46$; $a_1/b_3 = 1.28$, $b_2/b_3 = 0.88$, $b_1/b_3 = 0.76$, $\sigma_1 = 1.48$, $\sigma_2 = 1.48$ (a_3, b_3 - the outer surface). Fig.1 shows the data of the dispersion surface: the curves of the phase v and the group velocity V of the first harmonic for various values of $\varphi = $ arc tg m_1/m_2.

The limiting values of v/b_3 (as related to the Raleigh waves) are 0.9265 for $\lambda \rightarrow \infty$, 0.6923 for $\lambda = 0$, $\varphi \neq 0$, 0.8011 for $\lambda = 0$, $\varphi = 0$. Figs.2-4 show the surface v/b_3 (for second, third and fourth harmonics). When $V/b_3 \approx 0.7$ for $\lambda = 0$ and m_1/m_2 is small, the group velocity has a second minimum in high frequencies (Ref 1). It can be seen from Fig.1 that when the value

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Dispersion of the Rayleigh Waves in a Two-Layer Model of the
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of m_1/m_2 increases, the equivalent value $(m_1 + m_2)$
decreases. This is explained by a decrease of the
wavelength due to $b_1 < b_2$. In order to determine
m_1 and m_2 by means of the curves (Fig.1), it is
necessary to find the dispersion V in the homogeneous
region so that the respective value of b_3 can be
established. (The notations of Fig.1 are as follows:
1 – phase and 2 – group velocities, 3-6 – experimental
data for Rayleigh waves in various localities (Ref 1)).
There are 4 figures, 1 table and 8 references, 5 of
which are Soviet, 3 English.

ASSOCIATION: Akademiya Nauk SSSR Institut fiziki Zemli
(Ac.Sc. USSR, Institute of Earth Physics)

SUBMITTED: September 10, 1957

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KRYLIS-BOROK, V.I.; ULIYANOVA, V.I.

Creep of hollow cylinders due to the action of a normal pressure.
Trudy Inst. fiz.zem. no.9:211-219 '59.   (MIRA 12:11)

                    (Deformations (Mechanics))

6f303

3.9100   SOV/49-59-11-1/28

AUTHORS: Keylis-Borok, V. I., and Monin, A. S.

TITLE: Magneto-elastic Waves and the Boundary of Earth Core

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya,
            1959, Nr 11, pp 1529-1541 (USSR)

ABSTRACT: The authors describe results of their investigations of
            the dispersion, damping, polarization and origin of
            magneto-elastic waves. The damping of waves with an
            increase of the field strength H_0 attains a certain
            maximum value from which it gradually tends to 0. Two
            types of waves can occur in a strong field: slow waves
            with a velocity between the transverse and longitudinal
            elastic waves, and fast waves with a velocity
            proportional to H_0. An intense mechanical vibration
            can only be caused by slow waves. The characteristics
            of the latter, being similar to longitudinal or
            transverse waves, depend on the direction of their
            propagation and are not affected by the initial pulse. The
            observed range of velocities of seismic waves in a
            stratum D" can be explained by a linear increase of
            the gradient k/ρ and by a decrease of u/ρ (see table)
            due to compensation by the magnetic field. The
            existence of transverse waves in the core can be

Card 1/2   explained by a presence of the magnetic field μ

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Magneto-elastic Waves and the Boundary of Earth Core

            unless there is a layer 20 to 80 km thick at its surface
            with an increased resistance (to $\sim 0.4 \times 10^{-8}$ sec) or
            there is a radial   field with a strength $\sim 10^9$ to 10^{10}
            oersted. An increase of the phase velocity v of
            longitudinal and transverse (dashed lines) waves is
            illustrated in Fig 1, where the numbers on curves
            denote a squared strength of the field ϕ. Fig 2 shows
            the polarization of vibration in a weak field. Fig 3
            illustrates the phase velocity of vibrations in a
            strong field. Fig 4 gives the coefficients of damping
            with distance in a weak field where the magnitudes of
            $e^{-K_\perp x\omega/a}$, $e^{-K_\parallel x\omega/a}$ determine   damping with a distance
            x of longitudinal and transverse waves respectively.
            Thanks are conveyed to G. S. Golitsyn, V. A. Kalinin and
            R. Khayd for their assistance. There are 4 figures, 1
            table and 12 references, 6 of which are Soviet and 6
            English.

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki Zemli (Academy
             of Sciences USSR, Institute of Physics of Earth)

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PHASE I BOOK EXPLOITATION   SOV/4521

Keylis-Borok, Vladimir Isaakovich

Interferentsionnyye poverkhnostnyye volny (Interference Surface Waves) Moscow,
   Izd-vo AN SSSR, 1960. 194 p. Errata slip inserted. 3,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut fiziki zemli im. O. Yu. Shmidta.

Resp. Ed.: D.I. Sherman; Ed. of Publishing House: T.B. Yanovskaya; Tech. Ed.:
   T.V. Polyakova.

PURPOSE: This book is intended for geophysicists, seismologists, meteorologists,
   and oceanographers.

COVERAGE: This is a study of oscillations of a layered elastic medium (plane-
   parallel, uniform, isotropic, and ideally elastic layers) from a single viewpoint.
   The general physical and mathematical description of the oscillations is suitable
   for direct analysis of the mathematical derivation and for studying the solutions
   together with the system of boundary conditions, without resorting to cumbersome
   solutions of elastic theory problems. This approach made it possible to obtain
   general results for any number of layers and for practically any nonsymmetric,

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GAMBURTSEV, Grigoriy Aleksandrovich, akademik [deceased]; RIZNICHENKO, Yu.V.,
    red.; MOLODENSKIY, M.S., red.; BERZON, I.S., doktor fiz.-mat.nauk, red.;
    KEYLIS-BOROK, V.I., doktor fiz.-mat.nauk, red.; LYAPUNOV, A.A.,
    doktor fiz.-mat.nauk, red.; YEPINAT'YEVA, A.M., kand.tekh.nauk,
    red.; KOSMINSKAYA, I.P., kand.fiz.-mat.nauk, red.; STARODUBROVSKAYA,
    S.P., mladshiy nauchnyy sotrudnik, red.; BERKGAUT, V.G., red.izd-va;
    MARKOVICH, S.G., tekhn.red.

[Selected studies] Izbrannye trudy. Moskva, Izd-vo Akad.nauk SSSR,
1960. 461 p.   (MIRA 13:7)

1. Chleny-korrespondenty AN SSSR (for Riznichenko, Molodenskiy).
            (Prospecting—Geophysical methods)

KEYLIS-BOROK, V.I.

PHASE I BOOK EXPLOITATION SOV/4490

Akademiya nauk SSSR. Institut fiziki Zemli

Voprosy teoreticheskoy seysmologii i fiziki zemnykh nedr (Problems in the Theory of Seismology and Physics of the Earth's Interior) Moscow, 1960. 172 p. (Series: Its: Trudy, no. 11 (178)) Errata slip inserted. 1,700 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut fiziki Zemli imeni O. Yu. Shmidta

Resp. Ed.: V.A. Magnitskiy, Doctor of Technical Sciences; Ed. of Publishing House: V.A. Kalinin; Tech. Ed.: S.G. Tikhomirova.

PURPOSE: This collection of articles is intended for astrophysicists, geophysicists, and seismologists.

COVERAGE: This issue of the Transactions of the Institute of Physics of the Earth imeni O. Yu. Shmidt contains articles on theoretical problems in seismology and on recent investigations in the field of earthquake mechanics. Four out of fourteen articles in the collection have been abstracted. References accompany individual articles.

Lyubimova, Ye. A. Heat Transport by Excitons in the Earth's Mantle [illegible]

Magnitskiy, V.A. Problem of Interpretation of Principal Irregularities [illegible] the Gravitational Field of the Earth [illegible]
The author discusses the basic deviations of the earth's gravitational field from the normal values, and reports on the calculation of the densities of the equivalent layer made by the well-known Helmert formula in order to evaluate the magnitude of the disturbing masses. It is pointed out that similar calculations made by E. Niskanen and L. Tanni in 1951 [ref. given] are not entirely acceptable since they are based on geoid altitudes obtained by L. Tanni in 1948 [ref. given].

The present article gives values of equivalent layer density [illegible] every ten-degree sector from data by I.D. Zhongolovich. The [illegible] shown graphically. The error in the calculation of equivalent [illegible] density is 10% of the maximum value. The errors in geoid elevation [illegible] much smaller. Several theories as to the nonuniform mass distribution [illegible] the mantle are advanced. The author concludes that uneven distribution [illegible] radioactive elements in the earth, causing temperature variations in the solid mantle, nonuniform mass distribution, and other factors can be the cause of extensive perturbations in the gravitational field.

[illegible]litsyn, V.P. Transition of Solid Helium to the Metallic Phase [illegible] High Pressures 86

[illegible]rk, B.M. Some Functional Methods in the Ideal Linear Theory of [illegible]ticity 90

[illegible]ylis-Borok, V.I., and G.I. Pavlova. Generalization of Data on the [illegible] of Earthquakes 121
A method for reducing the characteristics of observations to [illegible] generalized parameters of the mechanics of earthquakes is [illegible] Analysis was made of systems of observations for the Garm [illegible]thern Tyan'-Shan', the Caucasus, and for the region situated northwest of the Bol'shoy Balkhan mountain range (Turkmeniya). The authors conclude that the method described is cumbersome, but that it is justified by the resulting simplification of nodal line plotting for which there have been no formal rules. The results of this study, based on observations of the Tadzhikskaya Kompleksnaya Seysmologicheskaya ekspeditsiya (Tajik Combined Seismological Expedition) network of stations, and on data from the literature, indicate that without preliminary analysis of a system of observations there is no reason for overall study in a new region of the mechanics of earthquakes, or the mass processing of any system of observations for any purpose whatsoever. The principle at the base of the proposed method for studying the prevalent strikes and dips, shifts of discontinuities, etc., can be applied in the solution of a number of other problems. No personalities are mentioned.

S/169/61/000/011/006/065
D228/D304

AUTHOR: Keylis-Borok, V. I.

TITLE: Studies of the dislocations at earthquake foci

PERIODICAL: Referativnyy zhurnal. Geofizika, no. 11, 1961, 14-15,
            abstract 11A141 (V sb. Probl. tektonofiziki, M., Gos.
            geoltekhizdat, 1960, 309)

TEXT: A method permitting determination of the properties of dis-
locations at an earthquake focus from seismic data (the mechanical
type of fracture, the dip and strike of the plane of fracture, the
direction of movement) was elaborated. About 300 earthquakes were
investigated in the main seismically-active zones of the Soviet
Union and adjoining regions: the north-west edge of the Pacific
Ocean, the Hindukush, the Pamirs and Tyan'-Shan', Kopet-Dag and
Western Turkmeniya, and the Caucasus. On the whole, the disloca-
tions at the foci have approximately the same similarities to and
differences from the main tectonic structures as those which have
been formed in recent times and which are distinguishable in neo-

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tectonics. Dislocations with a transverse strike and with intense
horizontal components of movement are evidently noted more frequent-
ly at the foci than is the case in surface structures. Vertical mo-
vements at the foci of a number of areas are characterized by the
uplift of the limb of the fracture which has been turned to the si-
de of the tectonic depression. This agrees with the data of neotec-
tonics and with some results of abyssal seismic sounding. [Abstrac-
tor's note: Complete translation].

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S/169/61/000/010/009/053
D228/D304

AUTHORS: Bune, V. I., Gzovskiy, M. V., Zapol'skiy, K. K.,
                 Keylis-Borok, V. I., Krestnikov, V. N., Malinovskaya,
                 L. N., Nersesov, I. L., Pavlova, G. I., Rautian, T. G.,
                 Reysner, G. I., Riznichenko, Yu. V., and Khalturin, V. I.

TITLE: Methods of the detailed study of seismicity

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 10, 1961, 12-13,
                 abstract 10A144 (Tr. In-ta fiz. Zemli AN SSSR, no. 9,
                 1960, 327 p.)

TEXT: The Tadzhik complex seismologic expedition was organized with
the aim of studying the nature of earthquakes and the conditions of their
genesis. The most seismically-active zones of the USSR (Garmo and Stalina-
bad) were chosen as the work areas. The specific conditions of working
and processing the data demanded the development of special systems of ob-
servation and methods of interpretation. The large amount of recorded

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seismic phenomena permitted the use of statistical methods for studying
their distribution in space and time; these methods, in their turn, pro-
vided the basis for introducing the quantitative indices of the seismicity
characteristics of the seismically-active areas. The actual seismic ob-
servations were closely coordinated with geologic investigations, and this
provided the possibility of exposing the tectonic basis of the seismic
phenomena. A general review of the work area is given in Chapter 1, and
concise data on major earthquakes are cited together with the general posi-
tion of the expedition stations. A description of the standard main and
auxiliary apparatus used at the stations, and also the layout and descrip-
tion of newly developed equipment--including an automatic seismic station
with a magnetic memory--is cited in Chapter 2. The methods developed and
utilized in the expedition for studying the crust's structure in the area
under investigation from the records of nearby earthquakes are described
in Chapter 3. Horizontal and vertical hodographs were constructed. The
resulting material enabled the crust to be represented as a one-layer mass

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with a longitudinal-wave velocity of 6.0 – 6.1 km/sec. At the Mohorovicic boundary, the velocity suddenly changes to 8.0 km/sec. and then somewhat decreases, but at a depth of 300 km it subsequently increases to 9.2 km/sec. These data underlay the construction of isochrone charts used to localize the epicenters and to determine the focal depths. The isochrone charts were constructed with an account of the heterogeneity of the work area's geologic structure and the peculiarity of the seismic stations' location. This enabled the precision of hypocenter localization to be substantially increased, reducing it to 1 – 2 km at the center of the work area's topographic map. In Chapter 4, the definition of the concept of seismic energy at the focus is given, and the basic formulas are derived for its calculation. On the basis of experimentally obtained laws for the dying out of energy with distance, nomographs were constructed to determine practically the energy at the focus from the records of nearby earthquakes. Appraisal of the precision of calculation of the energy in relation to different factors shows that it may be determined accurately to the order of its magnitude. In this connection, the value $K = lg\ E\ j$.

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is introduced for characterizing the energy class of earthquakes. The value of K is compared with the earthquake magnitude M. The study of the iso-energy lines shows that the different degrees of the dying out of seismic energy along and across the strike of geologic structures exert a decisive influence on the form of the isoseisms. In Chapter 5, the frequencies of seismic vibrations are studied--in relation to the earth-quake energy, the distance from the source, the geologic conditions at the point of observation and at the hypocenter, etc.--from recordings at both the customary stations and a special ЧИСС (ChISS) seismic-station intended for frequency analysis of seismic waves directly at their place of registration. A detailed description is given for the frequency-selective seismic-station ЧИСС-1954 (ChISS-1954) and for the results of the investigation of its recordings. Certain epicentral zones with an anomalous frequency are thereby revealed. The procedure for theoretically calculating the focal characteristics, and also for appraising these latter from empirical data, is given in Chapter 6. Several formulas are

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cited for determining the size of a focus in relation to its energy on the
basis of different physical propositions. The dynamic parameters of the
foci are determined; there appear to be definite predominant directions
for both the strike and dip of the fracture planes. The characteristics
of the seismic conditions of the Garmo and Stalinabad seismically-active
regions--both as a whole and in individual areas--are quoted together with
the variations in the parameters of the conditions in time. The quantita-
tive expression of the seismicity during constant seismic conditions is
determined by the seismic activity. The possibility is shown of construct-
ing graphs of the recurrence of earthquakes from short observations of
weak shocks, and methods are given for determining the period required to
obtain the parameters of he seismic conditions with a pre-set precision
in relation to the energy of the recorded earthquakes. The statistical
constancy of the seismic conditions is determined by the so-called measure
of dispersion of the frequency of earthquakes. A brief description of the
area's stratigraphy and the history of its geologic development is given
in Chapter 8. The structural schemes and descriptions of the most important

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deep faults are cited. The contemporary structure of the Garmo area is depicted as two main regions: the alpine geosynclinal zone in the south and the activated epi-Hercynian platform in the north. In section, it is drawn as several steps of Paleozoic basement adjoining each other along deep faults. A comparison of the seismicity with the tectonics of the study areas is made in Chapter 9. The construction of maps of isolines of seismic activity and gradients of the rate of tectonic movements is recommended for appraising the connection between the seismicity and the tectonics. Methods are cited for constructing such maps. The congruence between these magnitudes is established for the regions under investigation, and areas with the maximum gradient values correspond to those with the highest values of seismic activity. 272 references. /Abstracter's note: Complete translation./

Card 6/6

KEYLIS-BOROK, V. I., KLABUKOVA, L. S., RADCHENKO, V. P.

Spherical waves in an inhomegeneous liquid. Trudy Inst. fiz. zem.
no.11:133-142 '60.   (MIRA 13:8)
              (Elastic waves)

$3,9300\left(2406,1019,1109,1327\right)$

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S/619/60/000/015/003/004
D039/112

AUTHOR: Keylis-Borok, V. I.

TITLE: The difference of the surface wave spectra of earthquakes and underground explosions

SOURCE: Akademiya nauk SSSR. Institut fiziki zemli. Trudy, no. 15 (182), Moscow, 1960. Seysmicheskiy effekt podzemnykh vzryvov, 68-101

TEXT: The dependence of the surface wave spectrum of the Rayleigh and Love type on the spatial properties of the source is investigated for the case of the most simple explosion and earthquake models. The effect of the dimensions and shape of the source on the surface wave spectrum and the intensity distribution in this source in the case of a given frequency spectrum of perturbance stresses is studied. Based on formula

$$U \approx R_A\left(\frac{p}{v},\phi\right) P_U\left(\frac{p}{v},z_0\right) Q(p) \frac{1}{\sqrt{r}} \; e^{-i\frac{p}{v}r} , \qquad (2)$$

where R_A is the spectrum of the source according to distance, and on other calculations in the article, the author compares the surface wave spectra

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for the accepted earthquake and explosion models. Formula (2) shows that
the difference in the surface wave spectra will be defined by the functions
of R which are independent from the structure of the medium. The calcula-
tions show that the difference between the sources is mainly determined by
their dimensions. The greater the dimensions, the longer will be the pre-
dominant surface wave period. At the same time, the dimensions of the
earthquake focus are much larger than those of the explosion zone. Conse-
quently, the surface wave periods during earthquakes are also much longer
than during explosions. It was established that there is a great differ-
ence among the surface wave spectra, but no difference in the spectra of
volumetric waves. During earthquakes the stress concentration is consider-
ably smaller than in explosions of the same energy level. So, in explo-
sions, the non-elastic deformation zone will be much smaller. The depth of
the source of earthquakes is larger than that of explosions. The theore-
tical conclusions of the author agree with experimental data taken from the
paper of S. D. Kogan, I. P. Pasechnik, and D. D. Sultanov (Ref. 7: "Dokl.
AN SSSR", 29, No 6, 1959.). For an explosion of 1 kg of explosives (accord-
ing to a report by D. A. Kharin), the seismic wave energy was $4 \cdot 10^{17}$ erg
and the destruction zone diameter ranged between 150 and 200 m. It was

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KEYLIS-BOROK, V.I.

Papers submitted for the 10th Pacific Science Congress, Honolulu, Hawaii 21 Aug - 6 Sep 1961.

BOGOROV, B. A., Marine Hydrophysics Institute, Academy of Sciences USSR - "Investigation into mineralization of organic substances of dead plankton under anaerobic conditions" (Section VII.C.1)

BOGDANOV, D. V., Institute of Oceanology - "Some regularities concerning the zonal distribution of chemical characteristics in the waters of the central part of the Pacific" (Section VII.C.1)

BOGOROV, B. A., All-Union Scientific Research Institute of Marine Fisheries and Oceanography - "Subarctic 'Sverge-make'" - a new basis for marine fishery investigations" (Section III.C.1)

BOGDANOVA, M. M., Institute of Oceanology - "The distribution of deep-sea biocoenosis in the Pacific in connection with food conditions" (Section III.C)

BOGOROV, Yu. M., Institute of Biology of Reservoirs, Academy of Sciences USSR - "The submarine illumination and the primary production of photosynthesis in the sea" (Section III.C.1)

BOICHUK, B. K., Institute of Biology of Reservoirs, Academy of Sciences USSR - "The problem of Barophic continental connection in the ornithogeographic elucidation" (Section III.A.3)

STEPOV, E. B., and ZENKEVICH, V. A., Institute of Oceanology - "The measurement of deep ocean currents, with the application of neutron buoys (method, apparatus, results)" (Section VII.D.5)

ZENKEVICH, E. A., and PONOMAREV, A. V., Institute of Oceanology - "Geostrophic currents in the Antarctic sector of the Pacific" (Section VII.D.5)

ZENKOVICH, V. P., Institute of Oceanology - "New data on the tectonics of southern Kamchatka" (Section VII.C)

ZENKEVICH, D. E., Institute of Oceanology - "Geological distribution of the people of Oceania in the USSR" (Section VII.B)

UDINTSEV, G. B., Institute of Oceanology - "Features of evolution in the bottom topography of the Pacific Ocean" (Section VII.C.1)

VASILIEVSKY, V. A., Institute of Geology - "Cretaceous flora of the Pacific coast in the USSR as a basis for the subdivision of continental deposits of this age" (Section VII.C)

VLASOV, G. M., ... possibilities in interpretation of surface waves of the Pacific" (Section VII.C.2)

VINOGRADOV, N. G., Institute of Oceanology - "The tectonic map of Eurasia" (Section VII.C)

VITVITSKY, G. N., Moscow State University, Geographical Faculty - "On the nature of the summer monsoon in East Asia" (Section VI.C)

VLASOV, G. M., Institute of Geology - "Some problems involved with wood studies in southeast Asia" (Section III.A.7)

VITVITSKY, Yu. M., Asst. Director, Geographical Museum, Moscow State University - "The physico-geographical zonation of the Sakhalin and the Kuril Islands" (Section VI.D)

VASILKOVSKY, N. P., Institute of Geology - "On the relation between the Upper Cretaceous and Paleogene floras of Australia, New Zealand, and Eurasia" (Section III.A)

IVSHIN, L. A., and FILATOVA, Z. A., Institute of Oceanology - "General regularities in the quantitative and qualitative distribution of the bottom fauna in the Pacific" (Section III.C)

IVANOVA, T. F., and KRYSHOVA, N. N., Institute of Zoology - "The comparative study in methods of primary production investigation of fresh-water plankton" (Section III.C)

ZHIRMUNSKY, A. V., Institute of Cytology - "Cyto-physiological investigation of temperature adaptations of invertebrates in the northwestern area of the Pacific Ocean" (Section III.C)

ZHIVAGO, A. V., Institute of Geography - "Outlines of southern ocean geomorphology" (Section VII.D.1)

KEYLIS-BOROK, Vladimir Isaakovich; NERSESOV, Igor' Leonovich; YAGLOM,
    Akiva Moiseyevich; SADOVSKIY, M.A., otv. red.; MEDER, V.M.,
    red. izd-va; YEPIFANOVA, L., tekhn. red.

[Methods of evaluating the economic effect of earthquakeproof
construction]Metodika otsenki ekonomicheskogo effekta seismo-
stoikogo stroitel'stva. Moskva, Izd-vo Akad. nauk SSSR, 1962.
45 p.   (MIRA 16:3)

1. Chlen-korrespondent Akademii nauk SSSR (for Sadovskiy).
            (Earthquakes and building)

BARLAS, V.Ya.[translator]; KEYLIS-BOROK, V.I., red.; RIZNICHENKO,
Yu.V., red.; PANTIYEVA, V., red.; DOTSENKO, V., tekhn. red.

[Underground nuclear explosions]Podzemnye iadernye vzryvy.
Moskva, Izd-vo inostr. lit-ry, 1962. 247 p. (MIRA 15:8)
Translated from the English.
                    (Underground nuclear explosions)

KARUS, Ye.V., kand. fiz.-mat. nauk, red.; KEYLIS-BOROK, V.I., doktor
fiz.-mat. nauk, red.; IONEL', A.G., ved. red.; YAKOVLEVA,
Z.I., tekhn. red.

[Problems in seismic prospecting]Problemy seismicheskoi raz-
vedki; sbornik statei. Moskva, Gostoptekhizdat, 1962. 225 p.
Translated from the English and French.   (MIRA 15:12)
          (Seismic prospecting)

42053

3.4300
9.9865

S/619/62/000/020/001/001
I046/I246

AUTHORS: Keylis-Borok, V.I. and Malinovskaya, L.N.

TITLE: Identification of explosions from the arrival of body waves

SOURCE: Akademiya Nauk SSSR. Institut fiziki Zemli. Trudy, no. 20(187), 1962.
Voprosy teoreticheskoy seysmologii i fiziki zemnykh nedr, 117-124

TEXT: In earthquakes, both rarefaction and compression waves are radiated from the
focus, whereas in explosions only compression waves are generated. There is, however, a
small but finite probability (of the order of 1/5) that even in case of earthquakes only
compression waves are recorded at all observation points. In this case, earthquakes are
distinguished from explosions by the sign of the first arrivals of the transverse SV
waves as recorded on stations within a sufficiently wide range of azimuths: negative SV
arrivals are characteristic of earthquakes, whereas positive SV arrivals characterize an
explosion. There are 8 figures.

Card 1/1

KEYLIS-BOROK, V.I.; YANOVSKAYA, T.B.

Relation between the spectra of surface waves and the depth
of the source in the earth's core. Izv. AN SSSR. Ser. geofiz.
no.11:1532-1539 N '62.   (MIRA 15:11)

1. Institut fiziki Zemli AN SSSR.
                    (Seismic waves—Spectra)

KEYLIS-BOROK, V.I.

"Seismology and the formal logic."

Report submitted to the Symposium on Results of the IGY-IGC (Intl.
Geophysical Year),   Los Angeles, California   12-16 Aug 1963.

PYATETSKIY-SHAPIRO, I.I.; ZHELANKINA, T.S.; KEYLIS-BOROK, V.I.; PAVLOVA, L.G.;
       REZNYAKOVSKIY, P.T.

      Use of electronic computers in locating earthquake epicenters. Dokl.
      AN SSSR 151 no.2:323-325 Jl '63.   (MIRA 16:7)

      1. Institut fiziki Zemli im. O.Yu.Shmidta AN SSSR. Predstavleno
      akademikom Ye.K.Fedorovym.
               (Electronic computers) (Seismometry)

ANDRIANOVA, Z.S.; KEYLIS-BOROK, V.I., kand. fiz.-matem. nauk;
     LEVSHIN, A.L.; NEYGAUZ, M.G.

     [Surface Love waves] Poverkhnostnye volny Liava. Moskva,
     Nauka, 1965. 107 p.   (MIRA 18:4)

KEYLIS-BOROK, V.l., dokt. fiz.-matem.nauk

Use of computation methods in studying the upper mantle; symposium in Moscow. Vest. AN SSSR 34 no.9:88-89 S '64.

(MIRA 17:10)

KEYLIS-BOROK, V.I., doktor fic.-matem.nauk

Computation methods in geophysical research; symposium in
Israel. Vest. AN SSSR 35 no.12:54-56 D '65.

(MIRA 19:1)

ACC NR: AT6033690   SOURCE CODE: UR/3231/66/000/002/0003/0045

AUTHOR: Azbel', I.Ya.; Yanovskaya, T.B.; Keylis-Borok, V.I. (Doctor of physico-
mathematical sciences

ORG: none

TITLE: Method of combined interpretation of hodographs and amplitude curves in studies
of the upper mantle

SOURCE: AN SSSR. Institut fiziki Zemli. Vychislitel'naya seysmologiya, no. 2, 1966.
Mashinnaya interpretatsiya seysmicheskikh voln (Machine interpretation of seismic waves),
3-45

TOPIC TAGS: upper mantle, hodograph, seismic wave, Monte Carlo method

ABSTRACT: The problem of determining the structure of the Earth's upper mantle from the
hodographs $t(\Delta)$ of the first few arrivals lacks a unique solution. This ambiguity may be
markedly offset, however, if the amplitude curve $A(\Delta)$ or $A^*(\Delta) = \log A(\Delta)$ of direct re-
fracted P waves is also utilized. Travel-time curves which hardly differ in $t(\Delta)$ may be
characterized by different $A^*(\Delta)$ and analysis of the latter can result in a marked reduction
of the set of curves obtained. The following method of solution of the reciprocal problem is
proposed: the sought travel-time curve TTC is parametricized, i.e. represented by a specified

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ACC NR: AT6033690

function of the parameters. The possible ranges of variation in these parameters, i.e. the region within which the true travel-time curve exists, are indicated, and individual TTC are scanned, on theoretically calculating for each TTC the data known from observations. The discrepancy between the computed and observational data then is calculated. The set of travel-time curves for which this discrepancy is sufficiently small represents the solution of the problem. Thus, the problem reduces to finding the region of the minimum of multivariate function (discrepancy between calculations and experiment) in the space of unknown parameters of TTC. Finally, the set thus identified must be compactly described, i.e. the common features of all the TTC thus found must be pointed out. The determination of the limits of the parameters and the selection of the type of the parameter-dependent function and the optimal method of search for the minimum depend on the conditions of solution of the converse problem in every particular case: on the accuracy of observational data, type of A (Δ), epicentral spacing for which t (Δ) and A (Δ) are specified, and the nature of the known and unknown parameters. Thus, e.g. if constraints are imposed on both velocities (according to t (Δ)) and velocity gradients (according to A (Δ)), of the methods used to search for the minimum the Monte Carlo method proves to be best. Orig. art. has: 14 figures, 31 formulas, 9 tables.

SUB CODE: 08, 12/ SUBM DATE: none/ ORIG REF: 012/ OTH REF: 003

Card   2/2

ACC NR: AP7004123   SOURCE CODE: UR/0011/67/000/001/0003/0010

AUTHOR: Keylis-Borok, V. I.

ORG: Institute of Geophysics, AN SSSR, Moscow (Institut fiziki Zemli AN SSSR)

TITLE: The use of electronic computers in studying the structure of the earth's crust

SOURCE: AN SSSR. Izvestiya. Seriya geologicheskaya, no. 1, 1967, 3-10

TOPIC TAGS: earth crust, earthquake, electronic computer, computer programming, computer application

ABSTRACT: The author presents an attempt to formalize computer operations for seismic data in order to obtain information concerning the structure of the Earth's crust. The first task is to find parameters describing the data succinctly while avoiding the loss of essential information. Earthquakes represent an important characteristic of crustal deformation; they occur in great numbers, each reported by coordinates of the epicenter, origin in time, intensity, and so forth. Other parameters are unrelated to tectonics. Total number shocks and energy are more preferable parameters, but still not representative. The author has chosen the sum of energies of individual earthquakes, raised to the 2/3 power, because it is convenient, concise and approximately proportional to the sum of the fracture areas of rupture at the foci. Summation was carried out on

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a sliding time scale, the sum at any moment being obtained by summing earthquakes for a certain number of years preceding that moment. This number of years varied for different studies, but was 3, 4, or 5 for examples illustrated in the paper. Consideration was given to areas involved in the summation (such as all the Himalayas for the Assam earthquake, the Pamirs, Hindukush, and Tien Shan for the Khait earthquake). Conclusions concerning the structure of the crust were in conflict because of the problem of selecting data, or the inability to handle all data. The solution of this problem lies in the recognition and elimination of ambiguity. In this study, records of several kinds of waves (longitudinal, transverse, Love, and Rayleigh) were used to investigate a section of the crust between Andizhan and Frunze. Results show a reliability range for seismic velocities down to depths of 60 km on the basis of two models: one with one intracrustal discontinuity (base of the sedimentary layer), the other with two such discontinuities (base of the sedimentary layer and the "granite-basalt" boundary). The outline of the computer program is broken down into four stages: 1) analysis of records at a single point, 2) study of earthquake foci, 3) refinement of basic empirical patterns, and 4) final conclusions, including sections of the earth, description of seismicity, and methods of recognizing faults. The author concludes that this method of treating seismic data should be more widely used. Orig. art. has: 6 figures. [04]

Card 2/2

Keyl'man, A. I. and Buzik, A. I.

Perspektivy Izucheniya I Ispol'zovaniya Goryuchikh Slantsev Saratovskogo
Kraya, Goryuchiye Slantsy, 1934, No. 5, 9.

SO: Goryuchiye Slantsy No. 1934-35 TN .871
                                        .G74

KEYL'MAN A. L.

Ispol'zovaniye Zoly Vyurtembergskogo Goryucheqo Slantsa, Goryuchiye Slantsy

1934, No. 6,45.

SO: Gory uchiye Slantey #1934-35 TN. 871 G74

KEYL'MAN, A.I. (g. Shohchinsk Kokchetavskoy oblasti)

Combined solubility table of electrolytes. Khim.v shkole 11
no.5:71-72 S-O '56.   (MLRA 9:11)
         (Electrolytes--Tables) (Solubility--Tables)

KRYL'MAN, E.I.

[Logarithms, exponential and logarithmic equations; an
experimental textbook] Logarifmy, pokazatel'nye i loga-
rifmicheskie uravneniia; eksperimental'noe uchebnce po-
sobie. Dushanbe, Tadzhikskii gos. univ., 1964. 63 p.
(MIRA 17:11)

KEYL'MAN, G.A.

New data on the geological structure of the Sysert' granitic region
[with summary in English]. Sov. geol. 1 no.6:121-135 '58.
(MIRA 11:10)

1. Ural'skoye geologicheskoye upravleniye.
(Ural Mountains--Geology)

KEYL'MAN, G.A.

Geology of the Ufaley granite massif. Sov. geol. 6 no.10:
120-122 O '63.   (MIRA 17:1)

1. Ural'skoye geologicheskoye upravleniye.

KEYL'MAN, V. A.: Master Tech Sci (diss) -- "Methods of improving the dirt roads

on loess in Rostov Oblast". Moscow, 1959. 25 pp (Min Higher Educ USSR, Moscow

Automobile and Road Inst), 150 copies (KL, No 13, 1959, 105)

KEYL'MAN, V.A.; YEREMENKO, S.I.

Electric heat treatment of bitumen without boilers. Avt.dcr. 28
no.318-9 Mr '65.   (MIRA 18:5)

28194
S/194/61/000/005/008/078
D201/D303

9.9865
3,9300 (1019,1109,1327)

AUTHORS: Gol'tsman, F.M. and Keyl'man, Yu.N.

TITLE: A universal filter for seismic signals

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika,
                   no. 5, 1961, 21-22, abstract 5 A161 (V sb. Prikl.
                   geofizika, no. 25, M., 1960, 55-56)

TEXT: The theory is briefly explained of a universal filter with
any pre-determined frequency response. A description is given of a
filter in which an audio amplifier in the form of a delay line is
used. This makes it possible to dispense with a preliminary record-
ing and subsequent reproduction of signals being filtered. The
total delay time of the signal in 120 LC sections of the delay line
is 72 microseconds, frequency range 10-150 c/s. The amplitude res-
ponse of amplifiers is linear for the range of input voltages
0-0.1 V. The output of the instrument was designed for connection
to a normal loop oscillograph. The technique of using the instru-

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A universal filter for seismic signals   D201/D303

ment is described and results of testing it are given. The possi-
bility is emphasized of using the instrument in seismological in-
vestigations, in particular for frequency separation of magnetic
and gravitational anomalies. 7 figures. 5 references. / Abstrac-
ter's note: Complete translation_/

Card 2/2

KEYL'MAN, Yu.N.

An attempt of model studies on self-reproductive and evolutionary
processes. Trudy Len. ob-va est. 72 no.1:134-137 '61.
(MIRA 15:3)

(INFORMATION THEORY IN BIOLOGY)

KSIKAN, L. I.

Drainage

Mechanical-filter apparatus for lowering water level. Stroi. prom. 29, no. 1, 1951

KITASH, L. I.

Water, Underground

Needle-filter apparatus for lowering water level. Stroi. prom. 29, no. 12, 1951

Monthly List of Russian Accessions, Library of Congress, August 1952. Unclassified.

KULAGIN, L. I.

Embankments

Overall mechanization of soil operations in erecting embankments. Stroi. prom., 30, No. 7,
1952.

Monthly List of Russian Accessions, Library of Congress, October 1954. Unclassified.

1. KEIMAKH, L.I. Eng.

2. USSR (600)

4. Chimneys

7. Technical rules for building a reinforced concrete chimney. Stroi.prom. 30 no. 10 0 '52.

9. Monthly List of Russian Accessions, Library of Congress, January   1953. Unclassified.